ELECTRONIC INNOVATIONS IN ACTION

TUBES

—PRODUCT INFORMATION—

Compactron Beam Pentode

6JB5

FOR TV VERTICAL-DEFLECTION AMPLIFIER APPLICATIONS

- COLOR TV TYPE
- 15 WATTS PLATE DISSIPATION
- VERTICAL OUTPUT TYPE
- HIGH VOLTAGE SCREEN GRID
- HIGH PERVEANCE

The 6JB5 is a compactron beam pentode designed for use as the vertical-deflection amplifier in color television receivers.

Features of the 6JB5 include high perveance, high plate dissipation, a high voltage screen grid, and the utilization of a T-12 bulb to improve life and reliability by lowering operating temperature.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* . . .	6.3±0.6	Volts
Heater Current‡	0.8	Amperes

Direct Interelectrode Capacitances, approximate§

Grid-Number 1 to Plate: (g1 to p)	0.49	pf
Input: g1 to (h + k + g2 + b.p.)	9.5	pf
Output: p to (h + k + g2 + b.p.)	6.5	pf

MECHANICAL

Operating Position - Any

Envelope - T-12 Glass

Base - E12-74, Button 12-Pin

Outline Drawing - EIA 12-57

Maximum Diameter.	1.563	Inches
Minimum Diameter.	1.437	Inches
Maximum Over-all Length	3.125	Inches
Maximum Seated Height	2.750	Inches
Minimum Seated Height	2.500	Inches

PHYSICAL DIMENSIONS

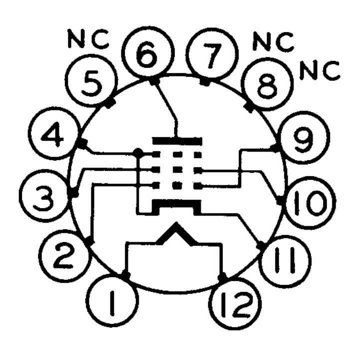
1.563"MAX.
1.437"MIN.
3.125" MAX.
T12
2.750"MAX.
2.500"MIN.

EIA 12-57

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Grid Number 1
Pin 3 - Grid Number 2 (Screen)
Pin 4 - Cathode and Beam Plates
Pin 5 - No Connection
Pin 6 - Plate
Pin 7 - No Connection
Pin 8 - No Connection
Pin 9 - Grid Number 1
Pin 10 - Grid Number 2 (Screen)
Pin 11 - Cathode and Beam Plates
Pin 12 - Heater

BASING DIAGRAM



EIA 12EY



MAXIMUM RATINGS

VERTICAL-DEFLECTION AMPLIFIER SERVICE¶— DESIGN-MAXIMUM VALUES UNLESS OTHERWISE INDICATED

Parameter	Value	Unit
DC Plate Voltage	350	Volts
Peak Pulse Plate Voltage	2500	Volts
Screen Voltage	300	Volts
Plate Dissipation#	15	Watts
Screen Dissipation#	2.75	Watts
DC Cathode Current	75	Milliamperes
Peak Cathode Current	260	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	1.0	Megohms
With Cathode Bias	2.2	Megohms
Bulb Temperature at Hottest Point	200	C

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Parameter			Unit
Plate Voltage	60	250	Volts
Screen Voltage	250	250	Volts
Grid-Number 1 Voltage	0Δ	-20	Volts
Plate Resistance, approximate	-	50000	Ohms
Transconductance	-	4100	Micromhos
Plate Current	180	43	Milliamperes
Screen Current	20	3.5	Milliamperes
Grid-Number 1 Voltage, approximate			
Ib = 100 Microamperes	-	-50	Volts

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts

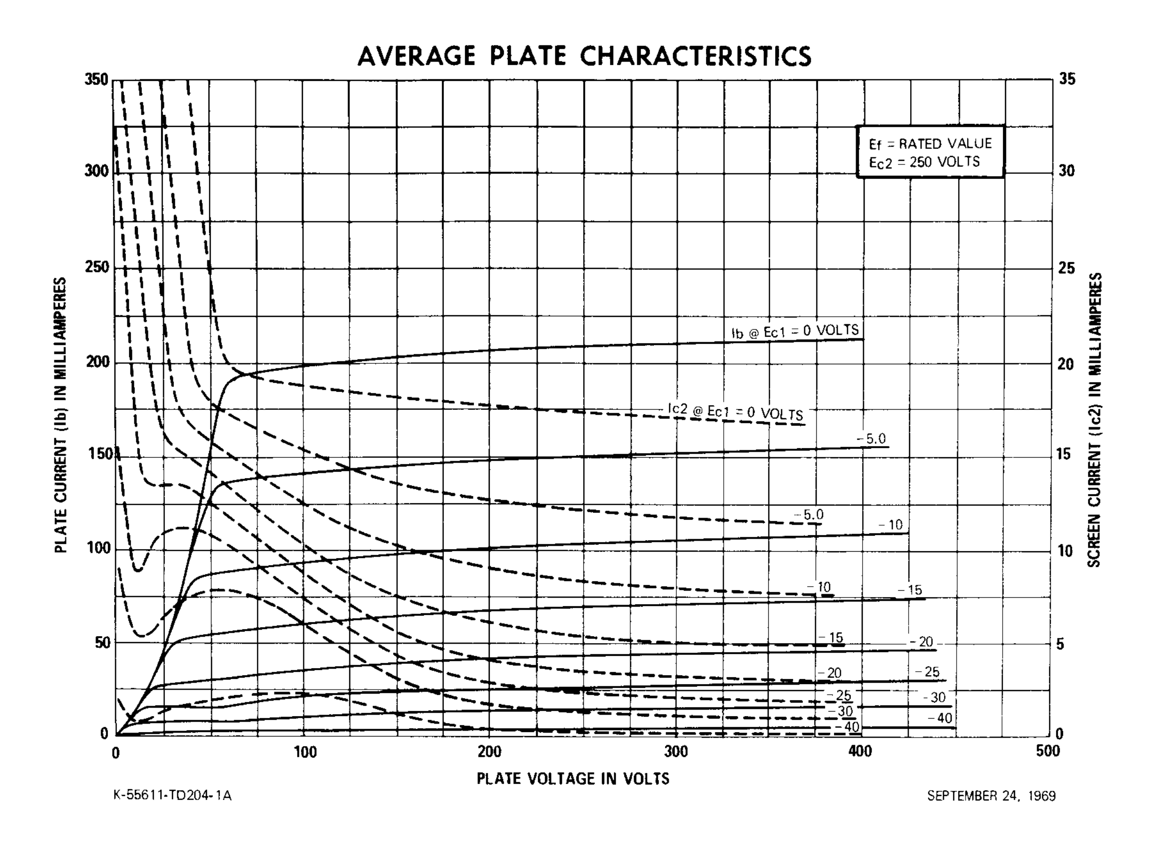
§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

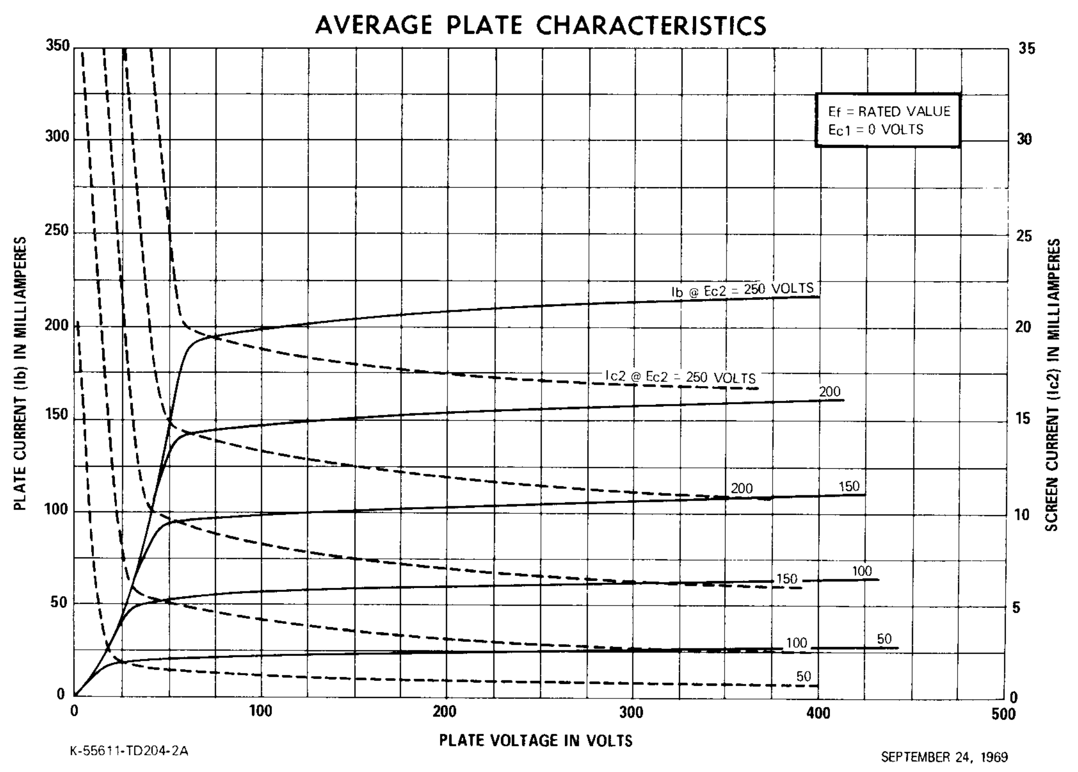
Δ Applied for short interval (two seconds maximum) so as not to damage tube.

AVERAGE PLATE CHARACTERISTICS



K-55611-TD204-1A SEPTEMBER 24, 1969

AVERAGE PLATE CHARACTERISTICS



K-55611-TD204-2A SEPTEMBER 24, 1969

AVERAGE TRANSFER CHARACTERISTICS

Ef = RATED VALUE
Eb = 250 VOLTS

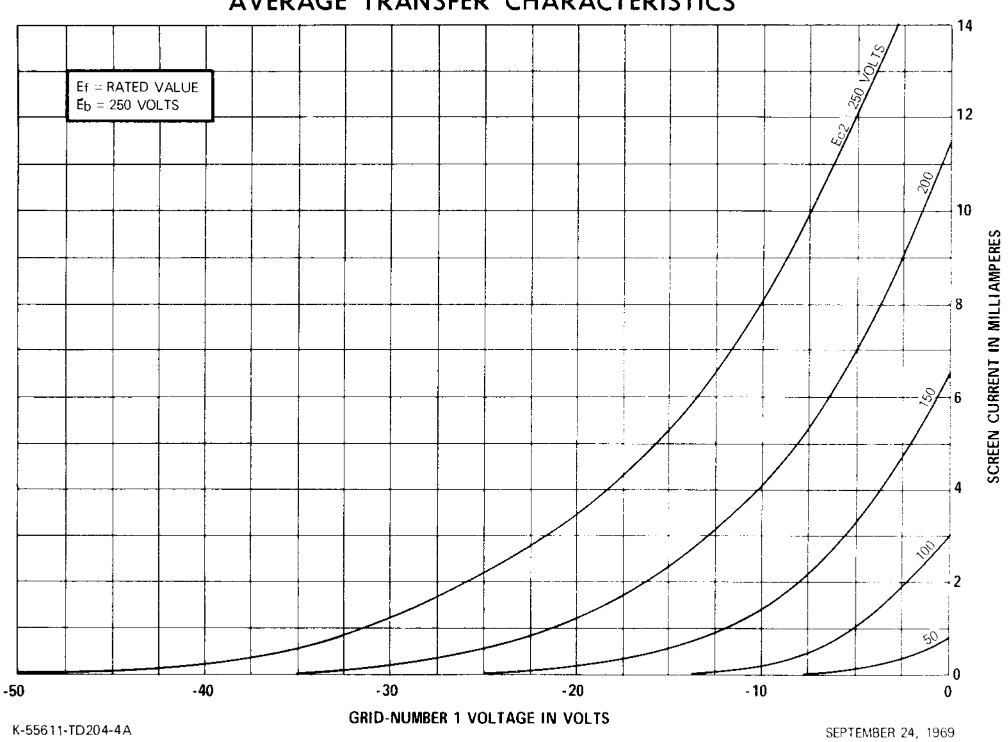
Ec2 = 250 VOLTS
200
150
100
50

PLATE CURRENT IN MILLIAMPERES
140
120
100
80
60
40
20
0

-50
-40
-30
-20
-10
0
GRID-NUMBER 1 VOLTAGE IN VOLTS

K-55611-TD204-3A
SEPTEMBER 24, 1969

AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD204-4A
SEPTEMBER 24, 1969

TUBE DEPARTMENT



Owensboro, Kentucky 42301